





# Bachelor of Science in Civil Engineering

## Student Planning Guide: First-Year Students Starting 2024-2025 with MATH 11

Fall	Winter	Spring
MATH 11 Calculus I	MATH 12 Calculus II	MATH 13 Calculus III
CHEM 11/11L (5)	PHYS 31/31L Physics for Engineers I (5)	PHYS 32/32L Physics for Engineers II (5)
ENGR 1 &/or 1L Intro to Eng. (1 unit)*	ENGR 1 &/or 1L Intro to Eng. (1 unit)*	ENGR 1 &/or 1L Intro to Eng. (1 unit)*
Critical Thinking and Writing I	Critical Thinking and Writing II	CENG 10/10L Surveying (3/1)
CENG 7/7L Graphical Comm (3/1)	Cultures and Ideas I	Cultures and Ideas II
Fall	Winter	Spring
MATH 14 Calculus IV	AMTH 106 Differential Equations	CENG 44B Strength of Matls II (2)
PHYS 33/33L Physics for Engineers III (5)	CENG 15/15L Comp. Appl. in CE (3/1)	CENG 115/115L Materials (4/1) OR CENG 143/143L Environ Engr (3/1)**
CENG 20/20L Geology (3/1)	CENG 44A/44AL Strength of Matls (3/1)	CENG 132 Structural Analysis
CENG 41 Statics	ENGL 181 Eng. Comm.	University Core***
Fall	Winter	Spring
CENG 141/141L Fluids/Hydraulics (4/1)	AMTH 112 Risk in Civil Engr (or AMTH 108)	CENG 128 Engr. Econ & Business (3)
CENG 145 Transport Engr Des	CENG 121/121L Geotech Engr (4/1)	CENG 140/140L Water Resources (4/1)
CENG 148/148L Structural Syst (4/1)	CENG 125/125L Municipal Engr (3/1)	CENG 115/115L Materials (4/1) OR CENG 143/143L Environ Engr (3/1)**
University Core***	CENG Tech Elective	CENG 192A Civil Engr Prof Practice (2)
		CENG Tech Elective
Fall	Winter	Spring
CENG 192B Civil Engr Prof Practice (2)	CENG 193 Civil Engr Project Design	CENG 194 Civil Design Commun. (1)
CENG 192C Civil Engr Prof Devel (1)	Free Elective	CENG Tech Elective
CENG Tech Elective	CENG Tech Elective	University Core
ELEN 49 Fundamentals of Elec CE	University Core	University Core
University Core		

 Humanities & Social Science	 Math & Science	 Major	 Technical Electives
---	--	---	---

\*ENGR 1 and 1L may be taken in any order and in any quarter in the first year. ENGR 1L is recommended Winter quarter to limit lab classes to two per quarter. If taken in later years, ENGR 110 is substituted for ENGR 1/1L.

\*\*CENG 115/115L and 143/143L are both required but may be taken either 2<sup>nd</sup> or 3<sup>rd</sup> year per student's preferred area of emphasis.

\*\*\*Students may consider the ENGR 16 (RTC-1) and ENGR 19 (Ethics) core class sequence here.

# Civil, Environmental, and Sustainable Engineering Technical Electives

2024-2025

Courses sharing a box are typically offered in alternating years

Fall	Winter	Spring	
118 (A) Constr Engr	119 (A) Des Sustain Constr*	124 (A) Water Law Policy	Structures
134 (D) Str Steel Des I	122 (A/D) Air Pollution 123 (A) Pollut Fate Transp	137 (A/D) Earthquake Engr	Water & Environ.
144 (D) Water Waste Trtmt	139 (A) Groundwater Hydr 161 (A) Sustain Water Res	138 (D) Geotech Engr Des	Transp.
147 (D) Pavement Design	133 (D) Wood Des 146 (D) Cold Form Steel Des	151 (A) Spec Topics Transp	Construct.
149 (A) Civil Systems Engr	135 (D) Reinf Concr Des	142 (D) Water Res Des 162 (A) Comput Water Res	Geotech.
184 (A) Construct Proj Deliv 187 (A) Heavy Construction	150 (D) Traffic Engr Des	185 (A) Cost Estimation	DIMA
	160 (A) GIS Water Res	182 (A) Build Info Model	
	186 (A) Constr Plan Control		

Five required technical electives must include: One digital information management and analysis (DIMA); Two design (D); One analysis (A); One either design (D) or analysis (A). **Not all electives are offered every year.** 137 and 122 can be applied as a design or an analysis elective. \*Students entering in 2020-2021 or earlier can count CENG 119 as a design elective.

## CORE Curriculum Requirements for CENG Majors

There are normally ten required humanities courses in the CORE Curriculum that all SCU students must complete. Engineering students can complete one course that satisfies two of these requirements (“double-dip”) as long as the course has been approved (visit <https://www.scu.edu/apps/courseavail> and click “advanced”) for both CORE categories.

Ten Required CORE Humanities Courses				
Critical Thinking and Writing I and II	Cultures and Ideas I, II, and III	Religion, Theology, and Culture	Ethics	Diversity
CTW-1 and CTW-2	C&I-I, II, and III	RTC-I, II, and III	Various	Various

Students also must complete coursework that satisfies five additional learning outcomes listed below.

Pre-approved Course Options for Specific, Supplemental Required CORE Curriculum Learning Outcomes				
Science, Technology And Society	Civic Engagement	Social Science	Arts	Experiential Learning
ENGL 181 & CENG 193	ENGR 1 & CENG 193	Various	ENGL 181 & CENG 193	Various

Engineering students complete an approved three-course (**12-unit**) Pathway or cluster of thematically linked courses as part of the SCU Core. Students must declare their Pathway by the end of their sophomore year. At least one Pathway course (minimum of four units) must be from outside their major department and any non-major Pathway course(s) should, where possible, satisfy other (base) CORE Curriculum requirements.

	Pre-approved Pathway Course Options/Recommendations for Civil Engineering Students			
	Digital Age	Sustainability	Values in Science & Technology	Design Thinking
Course #1	8 units from CENG 7, 15, 160, 182	8 units from CENG 20, 115, 119, 140, 143, 144, 161	8 units from CENG 115, 119, 140, 143, 144, 161	8 units from CENG 119, 128, 148, 192A, 193
Course #2				
Course #3 <sup>a</sup>	PHIL 22 or ENGR 19	PHIL 29 or RSOC 64	PHIL 29 or CHEM 11	PHIL 22 or ENGR 19

<sup>a</sup> **Departments occasionally change course numbers. Students should verify course numbers. Many other classes also work for course #3.**